


Doc Code: AP.PRE.REQ

PTO/SB/33 (07/05)

Approved for use through xx/xx/200x. OMB 0651-00xx
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) 10991268-3	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR on <u>10-7-06</u> Signature <u></u> Typed or printed name <u>Jamie Cameron</u>		Application Number 10/686,331	Filed 10/14/2003
		First Named Inventor Richard M. Butler	
		Art Unit 2193	Examiner Chat C. Do

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record.
Registration number 45,549

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____


Signature

Kyle J. Way
Typed or printed name

(720) 562-2283
Telephone number

10/2/06
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Richard M. Butler

Application No.: 10/686,331

Filed: 10-14-2003

For: GENERATION OF CRYPTOGRAPHICALLY STRONG RANDOM NUMBERS
USING MISRS

Confirmation No.: 7201

Group No.: 2193

Examiner: Chat C. Do

Mailstop: AF

Commissioner for Patents

P. O. Box 1450

Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Introductory Comments

In response to the final Office action dated July 25, 2006 (hereinafter “the final Office action”), the Assignee requests review of the final rejection in the above-identified application. No amendments are being filed with this request. A Notice of Appeal under 37 C.F.R. § 41.31(a)(1) is being filed herewith. The review is requested for the reasons provided in the following remarks.

Remarks

Claims 1-22 remain pending. Claims 1-21 stand rejected, while claim 22 is allowed. More specifically, claims 1-21 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. (Page 2 of the final Office action.) Claims 1, 2, 7-16, 18, 20 and 21 also stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,416,783 to Broseghini et al. (hereinafter “Broseghini”). (Page 3 of the final Office action.)

Independent method claim 1, from which claims 2-21 depend, is presented below:

1. A method of generating a random number, comprising:
 - via inputs to a number of multiple input shift registers (MISRs), randomly sampling data transmitted over a number of microprocessor buses;
 - retrieving values from the number of MISRs; and
 - generating a random number which is based on the values retrieved from the number of MISRs.

The Assignee respectfully requests review of the rejections and requests allowance of claims 1-21 for at least the following reasons.

Claims 1-21 Are Directed to Statutory Subject Matter Under 35 U.S.C. § 101 Because the Claims Do Not Recite a Method Based Solely Upon a Mathematical Algorithm, and Because the Generation of a Random Number is a Practical Application in the Technological Arts

The final Office action alleges that the claims “recite[] a method of generating a random number *according to a mathematical algorithm*. In order for [] method claims to be statutory, *the claims must include a practical application that produces a useful, concrete and tangible result*. However, the claims merely recite a method of generating a random number based upon an algorithm. As guided, a claim that recites a computer implemented that solely calculates a mathematical formula or a computer medium that solely stores a mathematical formula is not statutory.” (Page 2 of the final Office action; emphasis supplied.) The Assignee respectfully disagrees, and contends that the allegation represents clear error in the *prima facie* rejection, as claim 1 does *not* recite a method based solely upon a mathematical algorithm.

Questions regarding patentable subject matter are often raised where computer-related process claims are concerned. According to the Examination Guidelines for Computer-Related Inventions (MPEP § 2106; hereinafter “the Guidelines”), “[a] process that merely manipulates an

abstract idea or *performs a purely mathematical algorithm* is nonstatutory despite the fact that it might inherently have some usefulness.” (MPEP § 2106(IV)(B)(2)(b); emphasis supplied.) However, the method of claim 1, by way of input to a number of MISRs, *randomly samples data* transmitted over a number of microprocessor buses. Values from the MISRs are then retrieved, and a random number is generated based on those values. Thus, the random data samples, and hence the values retrieved from the MISRs, are not based upon, and in fact *cannot be duplicated by*, the use of something as deterministic as a mathematical formula, which would itself reduce the randomness of the number being generated. Instead, *random* interaction with electronic hardware or apparatuses (i.e., the microprocessor buses and the MISRs) is involved. Thus, claim 1 is not a process that merely manipulates an abstract idea or performs a purely mathematical algorithm, and therefore represents statutory subject matter under 35 U.S.C. § 101.

Further, the Guidelines indicate that “[f]or such subject matter to be statutory, the claimed process must be limited to *a practical application* of the abstract idea or mathematical algorithm *in the technological arts*.” (MPEP § 2106(IV)(B)(2)(b); emphasis supplied.) The Assignee asserts that the generation of a random number is a practical application in the technological arts (i.e., produces “a concrete, tangible and useful result”) as discussed under the Guidelines. (Id.) Numbers that are as close to being truly random as possible have a wide applicability in many technological arts, such as cryptography, electronic gaming and gambling, and others. (See, for example, paragraphs [0003] and [0007] of the present application.)

The final Office action states in its Response to Arguments that the claim is still nonstatutory because an application such as cryptography is not specifically claimed. (Page 6 of the final Office action.) However, due to the necessity of random number generation as a driving input into a wide array of technological applications, the Assignee asserts that the generation of the random number is itself a practical application, and produces a concrete, tangible, and useful result, as discussed under the Guidelines. Moreover, numerous previously-issued U.S. patents (e.g., U.S. Patent Nos. 7,085,791; 7,080,106; 7,028,059 and 7,020,283) specifically claim methods of generating random numbers without claiming an additional application.

Thus, based on at least the foregoing reasons, the Assignee contends that claim 1, as well as claims 2-21, which depend from claim 1, represent statutory subject matter under 35 U.S.C. § 101, and such indication is respectfully requested.

Claims 1-21 Are Allowable Under 35 U.S.C. §§ 102 Because Broseghini Does Not Teach or Suggest Any of the Limitations of Claim 1

The final Office action indicates that Broseghini discloses each provision of claim 1. (Page 3 of the final Office action.) The Assignee respectfully disagrees, and believes such an assertion represents clear error in establishing a *prima facie* rejection under 35 U.S.C. § 102.

Generally, Broseghini provides “[a] method and apparatus for generating pseudo-random numbers or for performing data compression in a data processor.” (Column 2, lines 41-43.) These functions are implemented with a small amount of specialized circuitry in conjunction with a central processing unit (CPU) for built-in-self-test (BIST) scan testing of integrated circuits. (Column 3, lines 18-30.) More specifically, the pseudo-random number generation provides the input data for the scan testing (see column 6, lines 20-29), while the data compression is applied to the results of the scan tests (column 8, lines 41-44). However, the method disclosed in Broseghini for generating pseudo-random numbers is quite different from that provided for in claim 1.

As shown in Table 1 and Figs. 5 and 9, Broseghini discloses a purely mathematical algorithm for generating pseudo-random numbers using at least a shift circuit 134, a replicating circuit 138, a logical ANDing circuit 140 and adder circuits 142, 144. (See Fig. 3; and column 9, line 42, to column 10, line 30.) However, the multiple input signature registers (MISRs), as they are referred to in Broseghini, are employed solely for the data compression operation, and *play no role in the pseudo-random number generation*. (See column 1, line 66, to column 2, line 13; column 11, line 62, to column 15, line 45; Table 2; and Figs. 6, 7 and 10.) Thus, the Assignee contends that Broseghini does not teach or suggest randomly sampling data transmitted over a number of processor buses via inputs to MISRs, or retrieving values from the MISRs, or generating a random number based on those values, as provided for in claim 1, and such indication is respectfully requested.

In its Response to Arguments, the final Office action maintains that the Broseghini pseudo-random number generation method teaches *random sampling* of data over a number of microprocessor buses by way of Fig. 3 and column 2, lines 14-28. (Page 6 of the final Office action.) The Assignee respectfully disagrees, as Broseghini does not appear to teach or suggest random sampling of any bus or other structure, either in CPU 20 of Fig. 3 or elsewhere. Further, the passage of Broseghini cited for support merely discusses several microprocessor families that

provide varying levels of self-test capability, and does not suggest random sampling of data.

Thus, based on at least the foregoing reasons, the Assignee contends that claim 1, and claims 2-21, which depend from claim 1, are allowable in view of Broseghini, and such indication is respectfully requested.

Conclusion

Based on the above remarks, the Assignee respectfully requests the reversal of the final rejection of claims 1-21.

The Assignee hereby authorizes the Office to charge Deposit Account No. 08-2025 the appropriate fee under 37 C.F.R. § 41.20(b)(1) for the Notice of Appeal filed herewith. The Assignee believes no additional fees are due with respect to this filing. However, should the Office determine additional fees are necessary, the Office is authorized to charge Deposit Account No. 08-2025.

Respectfully submitted,

Date: 10/2/06



SIGNATURE OF PRACTITIONER

Kyle J. Way, Reg. No. 45,549

Setter Roche LLP

Telephone: (720) 562-2283

E-mail: kyle@setterroche.com

Correspondence address:

CUSTOMER NO. 022879

HEWLETT-PACKARD COMPANY

Intellectual Property Administration

P.O. Box 272400

Fort Collins, CO 80527-2400